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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/070,294 | 06/13/2002 | Viktor Dumenko | 003300-913 | 2824 |

21839 7590 08/27/2003

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EXAMINER

SUKMAN, GABRIEL S

ART UNIT PAPER NUMBER

3641

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,294

Applicant(s)

DUMENKO ET AL.

Examiner

Gabriel S. Sukman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 is/are allowed.
- 6) ☒ Claim(s) 17,23,24,30 and 32 is/are rejected.
- 7) ☒ Claim(s) 18-22 and 25-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,9,10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "18", on page 10, line 20. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 23, 24, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,727,808 to Wang et al. (hereinafter Wang).

Claim 17 is anticipated by the detonator of Wang. As shown in figures 1 and 2 of Wang, there is an element (cap, 3) that causes compression of the base charge (8) under the pressure of combustion gases that develop from the initiating charge (7). Although not explicitly stated, it is inherent that the cap (3) is displaced by *some amount* as a result of the intense pressure of the burning initiating charge and therefore exerts a compression force on the base charge, thereby compressing it by some amount until the base charge is caused to detonate.

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Claim 23 is anticipated by the detonator of Wang as well. Wang discloses a compression means (cap, 3) that has the claimed characteristics, as discussed above regarding claim 17, since the cap (3) must inherently push against the base charge (8) and compress it to some degree as a result of the pressurization that is caused by the combustion of the initiating charge (7).

Claim 24 is anticipated by Wang when the charge 6 is considered to be the initiating charge and the charge 7 is considered to be the secondary explosive located between the initiating charge (6) and the base charge (8).

Claim 30 is clearly anticipated by Wang since the diameter of the initiating element is substantially the same as the inner diameter of the detonator, as seen in figure 1.

Claim 32 is clearly anticipated by Wang.

Claims 17, 23, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,978,791 to Lemley et al. (hereinafter Lemley).

Claim 17 is anticipated by Lemley since Lemley discloses the method of igniting a base charge as claimed, including an initiating charge (26) and a base charge (48), the base charge being further compressed by a compressing means resulting from the combustion of the initiating charge. The initiating charge (26) combusts and applies pressure onto the disc (38) sufficient to shear the central portion of the disc, which in turn is propelled through the bore (36) "in a manner quite similar to that of the piston within a cylinder" (col. 5, lines 20-21). In such a manner as described, it is inherent that

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the disc will compress the air or gas that originally occupied the bore (36) and consequently, such a compression/pressurization will in turn compress the base charge (48) *to some extent*, thus anticipating the claim.

Claim 23 is anticipated by Lemley as per the discussion above regarding claim 17.

Claims 30 and 32 are clearly anticipated by Lemley.

Allowable Subject Matter

Claim 31 is allowed.

Claims 18-22 and 25-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not disclose or suggest the combination that would teach a detonator that compresses a base charge such that at least some part of the charge attains a substantially crystalline state following an initiation phase.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4,335,652 to Bryan

U.S. Patent No. 5,223,664 to Rogers

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U.S. Patent No. 4,429,632 to Yunan

European Patent Application No. 0 339 847 A2 to Crane et al.

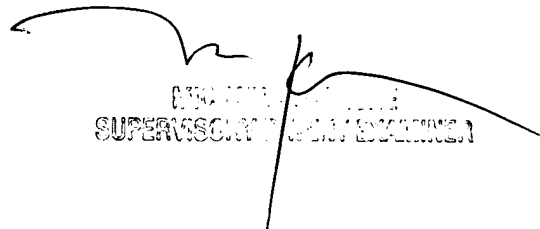
UK Patent Application GB 2 056 633 A to Shann

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel S. Sukman whose telephone number is (703) 308-8508. The examiner can normally be reached on M-F, 8:30-6:00, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4180.

gss

A handwritten signature in black ink is written over a rectangular stamp. The stamp contains the text "SUPERVISOR" and "EXAMINER" in a bold, sans-serif font. The signature is a cursive-style name, possibly "Michael J. Carone", written in black ink.